

Cookstove lore

By Don Fallick

I can smell yo' bread a-burnin', you better turn yo' damper down.

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'Case you ain't got no damper Mama, you better turn yo' bread aroun'.

—Traditional blues song

Wood-fired cookstoves have been around a long time, and, as the song demonstrates, there's more than one way to make a range do what you want. Too often, writers of articles about cookstoves tell you only *one* way to deal with them. This is a mistake. Not only are there hundreds of models of stoves in circulation, but any one stove will perform differently when connected to different flues.

I'm not going to tell you how to cook on a wood range. If you already know how to cook, you won't find a wood stove so terribly different, once you understand how to operate it. If you can't cook, a woodstove won't help much. I'm assuming you have a passing familiarity with at least one cookstove. If not, please read "Choosing and using a wood cookstove" in *BHM* #27.

Starting fires

You can't cook on a wood range if you can't get a fire going in it! Wood *will not burn* until the water present in the sap is driven off. How long this takes depends on how "green" your firewood is. Wood that has been out in the rain is only wet on the surface and dries fast. Green wood has water in the cells of the wood itself, and can take forever to catch.

If you have only green wood to burn, store it in the warming oven, bake it in the baking oven with the door open, stack it on the open oven door, or even right on the stovetop! Leave plenty of room for hot air to circulate and carry off the water. I stack wood fresh from the shed on top of the stove for about 24 hours, then rotate it to the oven or the oven door, then under the stove, and finally to the kitchen woodbox. It burns like crazy.

Very thin wood has lots of area to absorb heat and little volume to hold water, so it dries out and burns very quickly. Matchstick-thin splinters of the driest wood you have will catch fire quickly and get your fire going. But first, make sure it only burns what you want it to.

Safety

Fire is a wonderful servant, but a terrible master. Take pains to keep it in the stove! At the very least, make sure you have a non-combustible mat under the firebox door, extending out to the front at least a foot. Clinkers and cinders do sometimes fall out of the firebox when the door is opened, despite the best of intentions.

It's a good idea to have a *big* Type A-B-C "universal" fire extinguisher handy. Water will extinguish most wood fires (Type A)—but what if you're cooking bacon and it catches fire too? Mount the extinguisher between the stove and the door. The phone should be there too. That way, you can call the fire department, fight the fire, and still *escape* if the fire wins.

It is possible for a cookstove to co-exist peacefully with a fire alarm, if it's a *heat* detector. These are more expensive than *smoke* detectors, but not prone to false alarms caused by frying mutton or balky flues. Buy

them where you buy your smoke detectors.

Tinder

Matches and lighters will not heat even very thin wood enough to dry it out. You need some kind of fire starter, or *tinder*, to get the wood going. Every cook has his or her own system. I prefer to just crumble up two or three sheets of newspaper and toss them in. My neighbor Joann always uses pine cones wrapped in newspaper. Another neighbor collects pitch wood and breaks it into small pieces. My friend Dave buys "Presto-logs" and chops them into half-inch disks.

Whichever kind of tinder you use, the principle is the same. Place the tinder directly on the grate. It should extend the length of the firebox, and be accessible from the fire door, or wherever you light your fire from. Some stoves can only be loaded from the top, and some cooks prefer to load from the top. There's more chance of burning yourself that way, and you may have to move pots and pans around, but there's little chance of the fire escaping. In any case, arrange the tinder so you can light it without burning yourself.

Kindling

Tinder catches the flame. Kindling is what kindles the fire. I make my kindling out of old electric poles the REA doesn't want any more. They're made of cedar, which splits easily into matchstick-thin splinters, and they're bone dry after years of use. I generally use two sizes of kindling: matchstick and one-inch splits. I used to lay them in the stove *oh* so carefully, but discovered after several years that just throwing in a handful of splinters and

piling on a jumbled layer of splits works every bit as well.

If you have a top-loading firebox, consider adding another layer of 2x4-sized quarters of softwood logs before lighting the fire. Set them in with about a quarter of an inch between the flat sides. This creates a "chimney effect" that sucks fresh air up between the splits, in effect blowing on the fire. If you have an especially tight firebox, or if it's really cold outside, or for some other reason the flue just isn't "drawing" well, it's often helpful to let the kindling get going well before adding the splits.

Before actually igniting the tinder, check to make sure the damper is in the "kindle" position, so the flames go directly up the flue, instead of having to go all the way under the stovetop and around the oven first. Make sure the lower draft (if there's more than one) is open all the way, and check the stovepipe damper (if you have one).

This may seem complex, but the idea is simple: give the smoke a direct, unobstructed path. The "chimney effect," which causes your flue to "draw" the smoke out of the stove, is powered by the temperature difference between the fire and the outside air at the top of the chimney. The cooler the fire, the less the suction. A fire that's just starting needs all the help it can get, especially on a cold winter morning.

Cold weather

Hot air rises and cold air sinks. I've never been able to keep a fire going in a cookstove all night long, so by morning, the chimney is filled with cold, damp, *heavy* air. Trying to shove warm smoke up the chimney creates a temperature inversion—the same thing that makes smog in Los Angeles. The effect on your kitchen will be similar.

If this happens, pull out any large chunks of wood that are not actually on fire, and set them on the stove top, where they can't hurt anything. Leave

the firebox door open while feeding the fire with the thinnest, driest kindling you've got. If your firebox only opens from the top, leave it open, and make darn sure *all* drafts and dampers are open wide. You want to allow the cool chimney air a way to circulate downward while the warm smoke establishes an upward-moving column of air in the chimney. If all else fails, dump everything that's burning into the ash bin, clean out the firebox, and start over. Prevention is easier than cure, anyway.

If you think you're going to have cold air problems, the best thing to do is crumple up several sheets of newspaper, shove them in the back of the firebox, right next to the chimney, and light them. Newspaper burns very hot, yet produces relatively little smoke, so it's the best thing for warming up a cold chimney. Once the flue is drawing, light a new fire in the normal way.

Balky stoves

When a stove has frequent smoke problems, it usually means the stove or the flue, or both, need cleaning. Both are nasty, messy jobs, and tend to get put off longer than they should. How often your stove and flue need cleaning depends on many factors. Most people I know clean their cookstove every month or so, and their chimney once or twice a year, in the spring and fall.

If you have a shop vacuum, it'll help a lot in cleaning out the stove. You'll still have to remove the stove top, and open the clean-out door, and scrape with the stove cleaner, but you can get most of the soot in the canister, instead of on the floor.

Every cookstove article I've ever read gives detailed instructions on how to clean a stove. Yet there are so many designs, you're sure to miss something if you don't take the time to *look* at your stove before you buy it.

Take the whole top completely off. This may involve removing rusted-

together nuts and bolts. If you encounter this problem, the solution is simple—chisel them off with a hammer and cold chisel. You'll find it easier than you expect. Old-time stove makers knew this would happen, so they made the stove bolts out of soft iron, rather than the case-hardened steel we've come to expect. New stove bolts, made of the same stuff, are still available in your local hardware store.

If you've just bought an old cookstove and you want to clean it out thoroughly before you install it, the best way I know is to set it in the driveway and blast it out with the garden hose. When the water runs clean, let it stand for a few minutes, then build a roaring fire in it and keep it going for 45 minutes or so. I promise, it won't rust. Let it cool down completely, *then* bring it in the house. Keeping it clean should then be comparatively easy.

Stovetop tricks

Unlike their modern cousins, cookstoves can be used for *lots* more than normal stovetop cooking or baking. A wood range can function as a house heater, water heater, clothes dryer, toaster, crockpot, griddle, and many other appliances we no longer associate with cooking.

Food

There are lots of ways you can use a wood range stovetop to prepare food besides heating it up in a pan. The most common around our house is making toast. Lay a dozen slices of bread right on a hot stovetop for about a minute. Turn it and spread the toasted side with butter. By the time the other side's done, the butter has totally infused the toast. Sprinkle with cinnamon and brown sugar for a real treat. Even a five-year-old can do it. (And will, the moment your back is turned.)

You can cook pancakes right on the stovetop, too, though we prefer to use

a cast iron griddle. I don't recommend frying meat on the stove top, as the running grease can catch fire and cause some real excitement. Besides, the best way to cook meat on a cookstove is to remove the lids and broil it right over the coals. You can roast wieners and marshmallows that way, too.

Our cookstove is in constant use, all winter long. I try to keep a stock pot gently simmering on the back of the stove, adding scraps of meat (except cured pork and fish) whenever I can and a bit of water daily. The idea is always to have stock to use for gravy or soup, but hungry teenagers frequently have other ideas.

After Thanksgiving, I start a new stock pot with the turkey bones. A day or two later, I fish out all the bones that haven't dissolved, add onions, carrots, and potatoes, and let it simmer for another couple of days. About the time we can stand thinking about turkey again, we've got the best turkey soup you've ever tasted.

Beans, onions, chili, and other "noisy" vegetables undergo a chemical change when cooked slowly for two or three days. My digestion is rather sensitive to such foods, but even I have no problems with bean porridge in the pot, three days old. I've often wondered how it would taste "nine days old," but I've never been able to make it last that long!

Sad irons

Our cookstove does lots more than just cook food. Washday is a good example. The night before, we fill every canner in the house with water and set them on top of the stove. Next morning, we collect two or three *sad irons* and put them on the stovetop, too. By the time the breakfast dishes are washed, there's enough *pipin hot* water for a wringer-machine load of laundry. We rinse in washtubs of cold water, wring again, then iron clothes that need it with the sad irons.

The only special skill in using sad irons is judging how hot they are. The old trick of dropping water on the base works fine: if it skitters around, it's hot enough for cotton. Just remember that they're *always* hot enough to burn your hand if you grab them without a potholder. Forget once, and you'll know why they're called "sad irons." When the iron starts to drag a bit, replace it on the stove and pick up another iron. The irons cool off faster than they heat up, so you'll probably need three to work efficiently.

Sad irons can still be purchased, mail-order, from Cumberland General Store, in Cumberland Gap, TN, and Lehman's Hardware, in Kidron, OH. Sadly (pun intended), their cheaper, one-piece irons are most useful as doorstops. They are just castings, painted black, and the base surface is much too rough to actually use for ironing. My friend Gary, who has his own machine shop, milled mine smooth for me, and they work fine now. If you had to pay for machining, it would be cheaper to buy their more expensive, two-piece irons. These are well made, and come with detachable wooden handles, so you can use them bare-handed.

Clothes dryer

Clothes that don't get ironed can be hung above the stove to dry. Many old stoves have towel bars built in. In winter, there's almost always a folding clothes-drying rack parked in front of our stove. We clip wet mittens, socks, and boot-liners to the lip of the warming shelf with about a dozen clothes pins that live there permanently.

On really slushy evenings in the spring, you'll find several pairs of boots dangling from the rafters over the stove, too. Boots will hang upside-down and dry properly if you tie the laces under the boot, then tie all four laces together and drape them over a nail.

Bricks

The most unusual items you'll see on our stovetop (every winter evening, about an hour before bedtime) are *bricks*—one for each bed. Wrapped in an old towel and placed at the foot of the bed, a hot brick takes the chill off cold sheets and keeps you toasty warm all night. Needless to say, the kids have their favorites, and woe be to the child who takes her sister's "best" brick! Occasionally a child will be restless, and we'll all be awakened by a brick crashing to the floor in the middle of the night!

Sad irons work fine for this, if you don't have enough bricks, and some of our kids prefer them. That's why we have to collect them on laundry day. But my neighbor Marie came up with an even better foot warmer. She sews up denim bags of cherry pits to heat up in the oven. The cherry pits release heat more slowly than bricks, so they won't burn your feet if the towel slips. They also won't break your foot if you happen to kick them in your sleep. Best of all, they don't wake anybody up in the middle of the night!

Baking

Bricks come in handy in baking, too. Stacked strategically in the bottom of the oven, they soak up heat and re-radiate it, and thus even out the temperature. Most cooks prefer to use a pan of clean water, rather than a "dirty" old brick. Water will work too, but bricks (and sad irons) have another use in your oven. If you ever need to quickly *reduce* the oven temperature without leaving the oven door open, just quickly thrust in a couple of bricks or sad irons. They will absorb some of the heat from the oven air without causing a cold draft that can make your bread or cake fall. This works best if you *don't* keep them on the stove.

It's possible to *take advantage* of the uneven heat in a cookstove oven. One Thanksgiving, I baked a turkey, yams,

potatoes, and a pumpkin pie, all at the same time, and they all got done at once. Try doing *that* in a one-temperature gas or electric oven!

Cats

The only real problem we've had with our oven is keeping the family cats out of it. This may seem like a minor problem, but it's not. To heat the house with the cookstove, we run a couple of loads of wood through the firebox, with the damper in "bake" position and the oven door wide open. Left like this, the stove radiates heat into the house for hours. Trouble is, folks passing through the kitchen tend to bark their shins on the open door, so we close it after the house gets warm and the stove cools to room temperature.

The cats just love to crawl way into the back of the oven, up on the top rack, where it's warmest (and where we can't see them), and go to sleep. You can probably guess what happened . . . Mama forgot to check the closed oven for cats before firing up for dinner, and baked our pet.

After that happened, I got smart and made a "cat excluder" out of a bit of *hardware cloth*. This is not *cloth* at all, but half-inch galvanized metal mesh used for the bottoms of rabbit cages. I cut a piece about three squares larger than the opening, and bent the edges back until it would just fit. This lets the heat out, without letting the cats in.

If this problem ever happens to you, or to someone you love, it's comforting to know that cats will lose consciousness from the gentle heat and die without ever waking up. Or so the vet assures me.

Maintenance and safety

Keeping your stove and flue clean is *very* important, not just for performance, but also for safety. You definitely want to avoid flue fires, which can damage or even destroy a house.

Creosote is a goopy, flammable substance deposited on the inside of your flue by the woodsmoke. Don't be deluded by products which claim to safely burn off creosote. If they work at all, they are not safe to use. Creosote is rather hard to ignite, but once lit, it turns your flue into a giant Roman candle, fountaining super-hot, flaming goo high into the air. The pressure in the flue becomes great enough to force flaming creosote out of any cracks or weak spots in the flue. It could spoil your whole day.

Flue cleaning

Tradition has it that shaking hands with a chimney sweep gives one good luck. It's true...*if* the handshake means you have hired him to remove the creosote from your flue! Those who don't hire a chimney sweep (or do their own flue cleaning) may be unlucky enough to become the proud owners of a smoking hole in the ground.

The best way to clean a flue is with a metal-bristled flue brush. These are shaped and sized to fit all standard sizes and shapes of stovepipe and ceramic flue liners. They look like large bottle brushes, and are used the same way. Some have screw attachments for sectional handles. Frankly, I think the handles are almost useless in a tall chimney. I prefer the kind that have a loop at each end for attaching ropes. If you have an assistant, you can pull the rope up and down the chimney. The person at the bottom of the chimney will definitely get covered with soot!

A less messy way, if the creosote isn't too thick, is to tie a heavy weight, such as a logging chain, to the bottom loop, and do all the work from the top of the chimney. A good, *bright* flashlight taped *securely* to the rope will allow you to see what you are doing. A strong electric lantern or Maglite works best, as it's possible to de-focus the light so it shines in a wide area, instead of just straight up

the chimney. Even so, the cleaning will be a slow process. You'll have to wait for the soot to settle before you can see the results.

Backwoods chimney sweep

Sometimes I can't find my flue brush when I need it, and I hate to spend half a day's time and wages driving to town for a new one. I have an old set of tire chains that I use to clean the flue when this happens. Experts recommend against this method. It's true, you can knock off old patches, leaving dangerous holes in the flue liner. That's why you *look* at what you are doing, and avoid problem areas. A few blobs of creosote in an otherwise clean flue won't turn it into a giant Roman candle. But if you *do* knock a hole in your flue liner, it can be quite literally a matter of life and death to fix it before using the chimney.

The cleaning job isn't done until all the stovepipe has been removed, carried outdoors, and scoured clean. While doing this, inspect the pipe for thin spots, and replace any sections you're not *sure* will last until the next cleaning. Check the joints between sections, too. Soot accumulation on the "male" part of the joint (the crimped end) is a sure sign that stove gases are leaking into the room—a potentially lethal situation.

The fix is easy. After cleaning, smear stove cement on the male end and shove it hard into the female end of the next section. This will make it harder to break the joint next time you clean it, but it *will* separate with a bit of a tussle, and it *won't* leak.

Ashes, ashes, don't fall down!

Cleaning flues, stoves, and stove pipes have this in common: you end up with a large volume of soot or ash. In the old days, stove ashes were saved and leached into lye for soap-

making. Many a housewife must have wondered how such a dirty substance could be necessary for making *soap*!

Of course, some folks still make their own soap, but few use home-made lye. Ashes are still useful, though. We keep a five gallon metal container of stove ashes and soot in the outhouse. A pint or so tossed in after each use completely eliminates any "outhouse odors." We also keep an ash can near the porch steps, and other places where ice builds up. Sprinkled from a can on steps, walks, and paths, ashes or soot will melt ice and snow—and unlike rock salt, instead of polluting nearby soil, ashes will actually fertilize it.

If you can't stand the heat...

Like it or not, using a cookstove generates *heat*, not just in the pots, pans, and oven, but in the kitchen, too. In winter this can be a wonderful blessing. Our cookstove is the only heat source in our five-bedroom house. It lives near the center of our 40-foot-long "great room," and heats the upstairs via floor grates in each bedroom.

Winter fires

To get maximum heat from the (relatively) small firebox, we cook with one- or two-inch splits of pine or fir, then switch to four- to six-inch diameter logs, preferably of oak, ash, or vine maple, after the stove is good and hot. If we don't have logs small enough to fit, I try to split roughly rectangular pieces, but logs will burn longer than splits.

Getting maximum heat from a cook range takes frequent attention. You can't just fill it up with wood and let it burn like a heat stove. All that iron will continue to radiate heat a long time after the fire actually dies. If the dampers are closed too tight, the fire can go out before you notice. Then you're stuck with half-burned logs

that are really messy to deal with. If the dampers are opened even a little too much, the wood burns up quickly. As outside air temperature and winds change, it's necessary to make continual adjustments to wring the last bit of heat from the stove. But it can be done.

Summer fires

The opposite problem occurs in the summer, when you want to keep the kitchen cool, even with a stove going in it. We used to carry the stove outdoors in the summer, until my neighbor Andee showed me how to lay a "summer fire." There are three tricks to this.

First, choose your wood carefully, the softer the better. You want extremely dry, very light woods like poplar, aspen, and alder. Just about any evergreen will work, too, if it's *thoroughly* dry. Around here, we don't get much in the way of hardwoods. If, like me, you live in an ecology where Douglas fir is the "hardest" thing growing locally, save the dark, inner wood for winter and burn the outer wood in the summertime. Split all your cooking wood into one-inch squares or thinner pieces. Basically, you are cooking on the kindling.

The idea is to build a small, hot-burning fire that will last just long enough to heat up the food, then burn out without heating up the range itself. You can speed matters up a lot by building a fire under just *one* stove lid, then removing that lid and cooking in a thin-walled aluminum, steel, or copper-bottom pot, right over the fire. Your cookware will get black on the bottom, but you are less likely to get red in the face.

Finally, do all your cooking with all the dampers and drafts *wide open*. Yes, the fire will burn hotter, but most of the hot air will be carried up the chimney. If the food gets cooking too fast, set it on the stovetop for a while, closing the open lid to keep excess

heat circulating up the flue. And put out the fire when you're done cooking.

To heat water quickly for dishwashing, set flat pans of water on the stovetop. The shallower the water, the faster it will heat. If you do this while cooking, the water may actually help to keep the stove from heating up.

Repairs & refurbishing

It's pretty difficult to actually break a cookstove in normal use. Most stove damage I've seen occurred in moving or storage. The exceptions to this are burnout, rust, and broken hinges and catches. I don't include "broken" oven thermometers. By all accounts, none of them ever worked reliably, even when new.

Burnout

Cookstoves with firebox liners made of firebrick or removable, thick cast iron are designed for coal, as well as wood. Coal burns much hotter than wood, and *will* burn through such liners and perhaps through the grates and the "boot" (see below). Do not buy such a burned out stove unless you are willing and able to reline the firebox and/or replace the boot or grates. Firebrick is available and is usually not too difficult to replace.

Castings may be another story. Some stoves had "coal" liners *inside* the regular cast iron "wood" firebox. If your prospective stove is one of these, and if the "wood" firebox castings are OK, you may be safe in removing burnt-out "coal" liners and just using wood for fuel. I qualify this, because heat high enough to burn out the "coal" liners may have warped the whole firebox, leaving gaps where fire or noxious gases can escape into your kitchen. The only way to tell is to light a fire and close the damper. If smoke billows out of the firebox, check to see if the damage is repairable. A small crack can be patched with stove cement. It will have to be re-patched

from time to time, but you may choose to “save” an otherwise excellent stove this way. I wouldn’t buy a *badly* warped stove, no matter how pretty it is.

Burning coal may also have destroyed the grate. Unless you’ve got access to a “parts stove,” and know exactly how to remove and replace the grate, I’d be wary. Even if the grate is still in one piece, it may be frozen in the “coal” position. If you have a two-position grate, experiment to see which position is best for wood. Don’t depend on the previous owner to know what he is talking about. I burned wood in the “coal” position of my first stove for two years before I found out that the guy I bought it from was wrong. I couldn’t begin to describe all the different kinds of grates I have seen (much less the many, many more I haven’t), but generally, grates for coal hold it so air can enter from the bottom, while wood fires, once they get going, need more air from the top. Knowing this may help you decide which is which. If you can’t tell by experimentation, it doesn’t matter which you use, does it?

The boot

Cookstoves either exhaust their hot air directly through the back of the cooktop, or through an elbow-like projection called a *boot*, at the back of the stove. It’s *not* optional. Boots are thick castings, made to take the heat of direct flame. If you try to replace a missing one with an ordinary, sheet metal stovepipe elbow, it’ll burn through in no time, leaving you with a flame thrower in your kitchen.

It’s unfortunate, but a stove without a boot is useless, no matter how nice it looks. Iron foundries can make cast iron parts to order, but it’ll cost you. I won’t discount the possibility that a boot, or other parts, from a new stove manufacturer might fit. But with one exception, I’ve never heard of it happening.

That one exception is lids. New stoves, and lids to fit them, and many sizes and makes of old stoves, are available from Cumberland and Lehman’s. Lids were mostly made in standard sizes, and you can often find stove lids cheap at swap meets or in “junk” shops. Check the catalog prices before you buy from a “junk” dealer, though. I’ve seen rusty old stove lids sold for twice the price of brand new ones!

Broken castings

Sometimes a casting may be broken in transit or storage, by being dropped or struck accidentally. Don’t believe anyone who tells you he can weld any cast iron part that’s going to be exposed to heat, even with nickel. Cast iron expands at a unique rate when heated. Any other metal will expand and contract at a different rate. Soon, your repaired casting will be broken again.

Some old stoves were common enough that you may be able to find parts. If not, the only way to repair a casting is to replace it, either with an old casting from a “parts” stove or with a new, custom-made one from an iron foundry. Frankly, if you’re in an area where there’s enough wood to justify using a wood range, there are probably enough good stoves for sale to make it uneconomical to repair a broken one. Δ